

We claim:

1. A method for continuous production of a hydrate-containing material comprising the steps of:

delivering a fluid containing hydrate-forming species to a pressurized, temperature controlled, continuous-flow reactor;

delivering water to said pressurized, temperature controlled, continuous-flow reactor; and

mixing said fluid containing hydrate-forming species with said water within said pressurized, temperature controlled, continuous-flow reactor until a consolidated hydrate/fluid/water stream is formed.

2. The method of claim 1 wherein said pressurized, temperature controlled, continuous-flow reactor is a pipe, said water is injected into said pipe, and said consolidated hydrate/fluid/water stream flows from said pipe following said mixing step.

3. The method of claim 2 wherein said pipe includes static mixer blades.

4. The method of claim 1 wherein said continuous-flow reactor also includes:
means for controlling the flow rate of said fluid containing hydrate-forming species into said continuous-flow reactor;

means for introducing and controlling the flow rate of said water to said fluid containing hydrate-forming species in said continuous-flow reactor;

temperature control means for controlling the temperature of said continuous-flow reactor; and

a pressure control device for controlling the pressure within said continuous-flow reactor.

5. The method of claim 4 wherein said means for controlling the flow rate of said fluid containing hydrate-forming species is a mass flow controller.

6. The method of claim 4 wherein said means for introducing and controlling the flow rate of said water to said fluid containing hydrate-forming species in said continuous-flow reactor is a pump equipped with a flow controller.

7. The method of claim 4 wherein said means for introducing and controlling the flow rate of said water to said fluid containing hydrate-forming species in said continuous-flow reactor is a jet pump.

8. The method of claim 4 wherein said continuous-flow reactor further includes static mixing blades for mixing said fluid containing hydrate-forming species and said water.

9. The method of claim 4 wherein said continuous-flow reactor further includes electrically powered mixing blades for mixing said fluid containing hydrate-forming species and said water.

10. The method of claim 1 wherein said consolidated hydrate/fluid/water stream is a consolidated CO₂-hydrate/CO₂-liquid/water stream.